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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,345	08/27/2003	Bruno Pellat	61170-00017USPX	4157

7590 10/20/2006

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EXAMINER

HAROON, ADEEL

ART UNIT	PAPER NUMBER
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2618

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/649,345	PELLAT ET AL.	
	Examiner	Art Unit	
	Adeel Haroon	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36-40 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-9,11-20,22,23,25-31 and 33-35 is/are rejected.
- 7) ☒ Claim(s) 3,5,10,21,24 and 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Amendment filed on date: 8/04/06.

Claims 1-34 are still pending.

Response to Arguments

2. Applicant's arguments filed 5/18/06 with regard to independent claims 1, 7, 17, and 27 have been fully considered but they are not persuasive.

Applicant argues that Heck does not disclose the claimed limitation of "servocontrolling at least a common mode static output current from the frequency transposition device to a current proportional to a reference current and independent of t a static output current from the transconductor block". The examiner respectfully disagrees. Heck's common mode static output current is the current outputted by the emitters of 306, 308, 310, and 312, which comprise the frequency transposition device. These outputs are controlled by reference current sources 315 and 317 respectively; therefore, the common mode static output current from the frequency transposition device is servocontrolled to a current proportional to a reference current. Also, the common mode static output current becomes the input via the collector terminals of the

examiner interpreted transconductor block of 314 and 316. Since the common static output current is the input to the transconductor block, it is independent of the static output current from the transconductor block, which is at the emitter terminals of 314 and 316. Consequently, Heck discloses the disputed limitation.

3. Applicant's arguments with respect to dependent claims 3, 5, 10, 21, 24, and 32 have been fully considered and are persuasive. The rejections of these claims have been withdrawn.

4. Claims 1-2, 4, 6-9, 11-20, 25-32, and 33-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Heck (U.S. 5,548,840).

With respect to claim 1, Heck discloses a process or checking the static currents of a direct conversion type of frequency transposition device in figures 2 and 3 (Column 2, line 60 – Column 3, line 11). Heck discloses a transconductor block, element numbers 318, 320, 326, and 328, for receiving the input signal and a current switching block, element numbers 306, 308, 310 and 312, connected to the output from the device (Column 3, lines 55-67). Heck discloses servocontrolling a common mode static output current from the frequency disposition device to a current proportional to a reference current outputted by element numbers 315 and 317, which makes it independent of a static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 2, Heck discloses servocontrolling a common mode input current to the current switching block to a current proportional to the reference current, which makes it independent of the static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 4, Heck teaches servocontrolling the common mode static output current from the frequency transposition device directly to the said current proportional to the reference current and independent of static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 6, Heck teaches servocontrolling the static output current to a current proportional to the reference current and independent of the static output current from the transconductor block by servocontrolling each input current to the current switching block onto a current proportional to the reference current independent of the static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 7, Heck discloses a direct conversion type of a frequency transposition device with a transconductor block, element numbers 318, 320, 326, and 328, for receiving the input signal and a current switching block, element numbers 306, 308, 310 and 312, connected to the output from the device (Column 3, lines 55-67). Heck further discloses servocontrolling a common mode static output current from the frequency disposition device to a current proportional to a reference current outputted by element numbers 315 and 317, which makes it independent of a static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 8, Heck discloses servocontrolling a common mode input current to the current switching block to a current proportional to the reference current, which makes it independent of the static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 9, Heck discloses a current source, element number 317, generating the reference current on its output terminal connected to a current switching block input and a single current amplifier, element number 316, having a first input connected to the output terminal from the current source, a second input connected to the current switching block input and to the transconductor block output, and an output connected to the transconductor block output (Column 3, lines 12-54).

With respect to claim 11, Heck teaches servocontrolling the common mode static output current from the frequency transposition device to the said current proportional to the reference current and independent of the static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 12, Heck discloses a current source, element number 317, generating the reference current on its output terminal connected to a current switching block input and a single current amplifier, element number 316, having a first input connected to the output terminal from the current source, a second input connected to the current switching block input and to the transconductor block output, and an output connected to the transconductor block output (Column 3, lines 12-54).

With respect to claim 13, Heck teaches using differential signals (Column 2, line 60 – Column 3, line 11). Heck teaches improving IM performance of a balanced mixer,

which results in the difference between the differential input currents to the current switching block to zero (Column 2, lines 49-59).

With respect to claim 14, Heck discloses servocontrolling a common mode input current to the current switching block to a current proportional to the reference current, which makes it independent of the static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 15, Heck discloses a current source, element numbers 315 and 317, generating the reference current on its output terminal connected to a current switching block input and first and second current amplifiers, element numbers 314 and 316, having a first input connected to the output terminal from the current source, a second input connected to the current switching block input and to the transconductor block output, and an output connected to the transconductor block output (Column 3, lines 12-54).

With respect to claim 16, Heck discloses an integrated circuit (Column 3, lines 63-67).

With respect to claim 17, Heck discloses a wireless communication system terminal, which includes a direct conversion type of a frequency transposition device with a transconductor block, element numbers 318, 320, 326, and 328, for receiving the input signal and a current switching block, element numbers 306, 308, 310 and 312, connected to the output from the device (Column 3, lines 55-67). Heck further discloses servocontrolling a common mode static output current from the frequency disposition device to a current proportional to a reference current outputted by element numbers

315 and 317, which makes it independent of a static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 19, Heck discloses servocontrolling a common mode input current to the current switching block to a current proportional to the reference current, which makes it independent of the static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 20, Heck discloses a current source, element number 317, generating the reference current on its output terminal connected to a current switching block input and a single current amplifier, element number 316, having a first input connected to the output terminal from the current source, a second input connected to the current switching block input and to the transconductor block output, and an output connected to the transconductor block output (Column 3, lines 12-54).

With respect to claim 25, Heck discloses servocontrolling each input current to the current switching block to a current proportional to the reference current and independent of the static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 26, Heck discloses a current source, element numbers 315 and 317, generating the reference current on its output terminal connected to a current switching block input and first and second current amplifiers, element numbers 314 and 316, having a first input connected to the output terminal from the current source, a second input connected to the current switching block input and to the transconductor

block output, and an output connected to the transconductor block output (Column 3, lines 12-54).

With respect to claim 27, Heck discloses a direct conversion frequency transposition device in figures 2 and 3 with an input, a radio frequency stage connected to the input, a current switching stage connected to the radio frequency stage, and an output connected to the current switching stage (Column 2, line 60- Column 3, line 11). Heck also discloses a servocontroller operable to control standby currents in the radio frequency stage and current switching stage independently of each other (Column 3, lines 12-54).

With respect to claim 28, Heck further discloses that the radio frequency stage is a transconductor (Column 2, line 60 – Column 3, line 11).

With respect to claim 29, Heck discloses that the servocontrolled currents are standby output currents (Column 3, lines 12-54).

With respect to claim 30, Heck's system can be interpreted as direct servocontrolling.

With respect to claim 31, Heck discloses servocontrolling servocontrol the standby output current of the current switching stage directly to a current proportional to a reference current and independent of the standby output current of the radio frequency stage (Column 3, lines 12-54).

With respect to claim 33, Heck's system can be interpreted as indirect servocontrolling.

With respect to claim 34, Heck discloses servocontrolling a common mode input current to the current switching block to a current proportional to the reference current, which makes it independent of the static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 35, Heck teaches using differential signals (Column 2, line 60 – Column 3, line 11). Heck teaches improving IM performance of a balanced mixer, which results in the difference between the differential input currents to the current switching block to zero (Column 2, lines 49-59).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 18, 22, and 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heck (U.S. 5,548,840).

With respect to claim 18, the terminal of Heck is described above in the discussion of claim 17. Even though Heck discloses using the terminal in a radio communication system, Heck does not specifically teach a mobile cell phone. However,

the examiner takes official notice that it is extremely well known in the art to use a mixer in a mobile cell phone, which is part of a radio communication system. Therefore, it would be obvious to one of ordinary skill in the art to use Heck's frequency transposition device in a mobile cell phone.

With respect to claim 22, Heck discloses directly servocontrolling common mode static output current from the frequency transposition device to the said current proportional to the reference current and independent of the static output current from the transconductor block (Column 3, lines 12-54).

With respect to claim 23, Heck discloses a current source, element number 317, generating the reference current on its output terminal connected to a current switching block input and a single current amplifier, element number 316, having a first input connected to the output terminal from the current source, a second input connected to the current switching block input and to the transconductor block output, and an output connected to the transconductor block output (Column 3, lines 12-54).

Allowable Subject Matter

7. Claims 36-40 are allowed.
8. Claims 3, 5, 10, 21, 24, and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

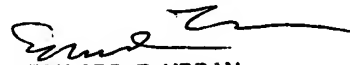
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adeel Haroon whose telephone number is (571) 272-7405. The examiner can normally be reached on Monday thru Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AH
10/10/06


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